

15

REMARKS

The above-identified application has been carefully reconsidered in view of the Office Action mailed October 14, 2004. Early and favorable reconsideration and allowance of the application as now presented are respectfully requested.

Regarding the 35 USC § 112 Rejections

The claims have been amended to address Examiner's rejections. It is believed the claims are allowable as amended.

Regarding the 35 USC § 102/103 Rejections

Referring specifically to the Examiner's claim rejections in Paragraph VII, based on Skotheim, U.S. Patent 4,442,185, Applicant respectfully submits that independent Claims 1, 31, and 97 are patentable over Skotheim per the following:

1. Responsive to the statement in the Office Action asserting that Skotheim '185 teaches a photoelectric device comprising a layer of n-type semiconductor which reads on the instant light energy conversion layer of Claims 1, 31, and 97, Applicant respectfully traverses the rejection as improper. Specifically, Applicant respectfully submits that the n-type semiconductor layer (131) of the cited prior art causes electrical conduction due primarily to movement of negative electrons and therefore does not specifically teach the claimed light energy conversion layer of Claims 1, 31, and 97.

2. Responsive to the statement in the Office Action asserting that Skotheim '185 teaches a photo-electric device comprising a p-type semiconductor layer (132) which reads on the claimed

charge separation layer of Claims 1, 31, and 97. Applicant respectfully traverses the rejection as improper. Specifically, Applicant respectfully submits that the cited prior art does not teach the claimed charge separation layer, because the p-type semiconductor layer (132) of the cited prior art causes electrical conduction due primarily to movement of positive holes and therefore does not specifically teach to the charge separation layer of Claims 1, 31, and 97.

3. Responsive to the assertion in the Office Action asserting that the platinum layer (135), or the highly conductive layer (134), or the combination of the platinum layer (135) and highly conductive layer (134) of Skotheim '185 reads on the conducting layer of Claim 1, the front contact layer in Claim 31, and the front conducting layer of Claim 97, Applicant respectfully traverses the rejection as improper. Specifically, the cited reference does not disclose a two-sided conducting layer; therefore, the rejection is unsupported by the art and should be withdrawn. Further, Applicant respectfully submits that the cited prior art teaches away from the claimed invention because the conducting layer of the cited prior art requires the use of electrolyte (see Col. 15, line 42) to complete electrical conduction, whereas the conducting layers of the claimed art, the two-sided conducting layer of Claim 1, the front contact layer in Claim 31, and the front conducting layer of Claim 97, eliminate the need for an electrolyte.

4. The last six lines of page 4 of the Office Action are not understood, as they do not reference any specific claims. Applicant therefore respectfully traverses the objections.

5. Applicant respectfully declines to address the remaining rejections in Paragraph VII at this time as they relate to claims dependent on claims which Applicant submits are allowable, as indicated in the foregoing responses.

6. Responsive to the statement made in the last paragraph of Page 5, Applicant respectfully traverses the rejections as vague. Further, Applicant respectfully submits the claimed invention is not obvious given the Skotheim device, because the Skotheim device requires electrolyte, which teaches away from the claimed invention eliminating the need for electrolyte.

Referring specifically to the Examiner's claim rejections in Paragraph VIII, based on Han, U.S. Patent 6,150,605, Applicant respectfully submits that independent Claims 1, 31, and 97 are patentable over Han per the following:

7. Responsive to the statement in the Office Action asserting that Han teaches a photovoltaic cell comprising a porous photovoltaic layer (3) that reads on the claimed light energy conversion layer of Claims 1, 31, and 97, Applicant respectfully submits that the cited prior art teaches away. Specifically, the cited prior art requires an electrically conducting film or electrode (see col. 2, line 50, and col. 5, line 60-62) to receive light before the photovoltaic layer (3), whereas the claimed invention does not require an electrically conducting film to receive light before the claimed light energy conversion layer.

8. Responsive to the statement in the Office Action asserting that an electrically conducting film (5) reads on the claimed conducting layer of Claim 1, the front contact layer of Claim 31, or the front conducting layer of Claim 97, Applicant respectfully traverses the rejection as vague, Applicant is unclear which element of the cited prior art the Examiner is citing to. If the Examiner is citing to the electrically conductive layer (5), Applicant respectfully submits that the cited prior art teaches away from the claimed invention. The cited element requires a colorant film between the photovoltaic layer (3) and the conductive layer (5) (see col 3, lines 5-8, col. 5, lines 59-

18

67). The claimed invention does not require a separate colorant film, or in the alternative does not require any colorant.

9. Responsive to the statement in the Office Action asserting that a second porous photovoltaic layer (7) reads on the claimed charge separation layer of Claims 1, 31, and 97, Applicant respectfully submits that the cited prior art teaches away. The cited prior art requires a colorant on one side of the second photovoltaic layer (7) and an additional conductive film (see col. 5, lines 64-69) in order to complete energy conduction, whereas the claimed charge separation layers do not require a colorant or additional conductive film to complete the light energy conversion.

10. Responsive to the statement in the Office Action asserting that the cited prior art has a back electrode which is an ohmic contact, no specific claim is referenced. The Applicant is unclear which claim the Examiner contends the cited prior art reads on and therefore respectfully traverses the rejection as vague. Assuming the Examiner contends the back electrode, described as conductive film (8), of the cited prior art reads on the electrically conductive metal back of Claim 31 and the two-sided back conducting layer of Claim 97, Applicant respectfully submits that the cited prior art is nonenabling as the cited element is not sufficiently described. In addition, Applicant respectfully submits that the cited prior art teaches away because the cited prior art requires a separate colorant film in conjunction with the conductive film (8) (see col. 5, lines 8-10) whereas the claimed invention does not require a separate colorant film, or in the alternative does not require any colorant film.

11. Applicant respectfully declines to address the remaining rejections in Paragraph VIII at this time as they relate to claims dependent on claims which Applicant submits are allowable, as indicated in the foregoing responses.

19

Responsive to the Examiner's claim rejections in Paragraph IX that Claims 16 and 52 are rejected as being unpatentable over Han (U.S. Patent 6,150,605) in view of Coleman (U.S. Patent 5,413,739), Applicant respectfully submits that the cited Han patent teaches away from the claimed invention because the conducting layer of the cited prior art requires the use of electrolyte (see Col. 15, line 42) whereas the conducting layers of the claimed art referenced in Claims 16 and 52 eliminate the need for an electrolyte. Therefore, Applicant respectfully submits that it would not be obvious to use ITO as shown by Coleman '739 as the conductive material for the claimed art.

Remarks Regarding the Double Patenting Rejections

Terminal Disclaimers which comply with 37 C.F.R. 1.321(c) are presented herewith. It is respectfully submitted that the enclosed Terminal Disclaimers overcome the double patenting rejections based on Patent Number 6,774,300 and Application Serial No. 10/750,015.

CONCLUSION

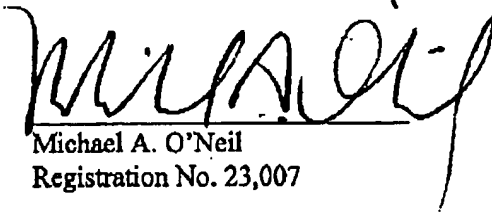
From the foregoing, Applicant respectfully submits that all of the stated grounds of rejections have been properly traversed, accommodated, or rendered moot. Accordingly, Applicant respectfully submits that all pending claims as now presented are in condition for favorable action and allowance.

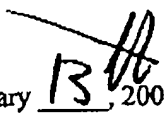
Should the Examiner require anything further, the courtesy of a telephone interview is requested. The Examiner may contact the undersigned attorney for applicant at 214-739-0088.

20

Respectfully submitted,

MICHAEL A. O'NEIL, P.C.


Michael A. O'Neil
Registration No. 23,007


Date: January 13, 2005
5949 Sherry Lane, Suite 820
Dallas, Texas 75225
(214) 739-0088
(214) 739-8284 (Fax)

500451-1004 response to 1st oa.wpd